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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* GUY L. STEELE, JR.

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Appeal 2007-1469  
Application 10/035,579  
Technology Center 2100

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Decided: September 13, 2007

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Before HOWARD B. BLANKENSHIP, ALLEN R. MACDONALD,  
and COURTENAY, ST. JOHN, III, *Administrative Patent Judges*.

MACDONALD, *Administrative Patent Judge*.

DECISION ON APPEAL

## STATEMENT OF CASE

Appellant appeals under 35 U.S.C. § 134 from a final rejection of claims 1-37. We have jurisdiction under 35 U.S.C. § 6(b).

Appellant invented systems and methods for performing a floating point *square root* with embedded status information associated with the floating point operand. (Specification [002]).

Representative independent claim 1 under appeal reads as follows:

1. A system for providing a floating point square root, comprising:  
an analyzer circuit configured to determine a first status of a first floating point operand based upon data within the first floating point operand; and  
a results circuit coupled to the analyzer circuit and configured to assert a resulting floating point operand containing the square root of the first floating point operand and a resulting status embedded within the resulting floating point operand.

The Examiner rejected claims 1-37 under 35 U.S.C. § 103(a).

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Lynch	US 6,009,511	Dec. 28, 1999
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Appellant contends that the claimed subject matter would not have been obvious. More specifically, Appellant contends Lynch fails to disclose an embedded status because the tag of Lynch is separate from the operand (Br. 8-11). Further, Appellant contends there is no motivation to modify Lynch to yield the claimed invention. (Br. 11-16).

The Examiner contends that it would have been obvious to store the “result with its tag as a resulting operand” to quickly determine its status. (Answer 4). The Examiner apparently alternatively contends that the “tag value is clearly stored within the operand.” (Answer 6).

We reverse.

### ISSUE(S)

Has Appellant shown that the Examiner has failed to establish Lynch suggests “a resulting floating point operand containing the square root of the first floating point operand and a resulting status embedded within the resulting floating point operand” as required by claim 1?

### FINDINGS OF FACT

The following Findings of Fact (FF) are shown by a preponderance of the evidence.

1. The prior art Lynch patent describes that the “FPU [floating point unit] core 94 uses the tag value associated with an operand to determine whether the operand is a special floating point number.” (Col. 16, ll. 62-65).

### PRINCIPLES OF LAW

“Section 103 forbids issuance of a patent when ‘the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.’” *KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727,

1734, 82 USPQ2d 1385, 1391 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill in the art, and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966). *See also KSR*, 127 S. Ct. at 1734, 82 USPQ2d at 1391 (“While the sequence of these questions might be reordered in any particular case, the [*Graham*] factors continue to define the inquiry that controls.”)

“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR*, 127 S. Ct. at 1741, 82 USPQ2d at 1396 (citing *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1339 (Fed. Cir. 2006)).

#### ANALYSIS

Appellant correctly points out the Examiner did not state a legally sufficient basis for the rejection as no evidence had been provided to show that it was known to a person skilled in the art that storing the result with its tag as a resulting operand results in quickly determining its status. The Examiner has not provided an appropriate articulated reasoning for modifying Lynch.

Further, we find no basis in Lynch for the Examiner’s alternative premise that the tag is stored within the operand. Rather, Lynch only teaches that the tag is associated with the operand (FF 1).

On the record before us, it follows that the Examiner erred in rejecting claim 1 under § 103(a). Since claims 2-37 are analogous or narrower than claim 1, it also follows that those claims were not properly rejected under § 103(a) over Lynch.

#### CONCLUSION OF LAW

(1) Appellant has established that the Examiner erred in rejecting claims 1-37 as being unpatentable under 35 U.S.C. § 103(a) over Lynch.

(2) On this record, claims 1-37 have not been shown to be unpatentable.

#### DECISION

The Examiner's rejection of claims 1-37 is Reversed.

REVERSED

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